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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,160	04/09/2001	Salman Akram	3846.2US(98-0796.2)	8501
24247	7590	04/25/2005	EXAMINER	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			GRAYBILL, DAVID E	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,160

Applicant(s)

AKRAM ET AL.

Examiner

David E. Graybill

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-34 is/are pending in the application.
- 4a) Of the above claim(s) 4,9 and 23-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 and 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1 page.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-8 and 12-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto (6255737).

At column 1, lines 38-53; column 1, line 66 to column 2, line 6; column 4, line 63 to column 8, line 20; and column 10, line 52 to column 12, line 8, Hashimoto discloses a method for fabricating a chip-scale package, comprising: positioning a preformed polymeric film 64 including at least one aperture 64a that extends substantially longitudinally therethrough over a semiconductor device with the at least one aperture in substantial alignment with a corresponding bond pad 62 of the semiconductor device; and inherently selectively introducing conductive material 68 into the at least one aperture; adhering the preformed polymeric film to the semiconductor device; defining the at least another aperture through the preformed polymeric film; wherein the defining is effected before the positioning,

wherein the introducing comprises bonding the conductive material to the corresponding bond pad, wherein the introducing comprises depositing the conductive material onto the preformed polymeric film and within the at least one aperture, wherein the depositing comprises physical vapor depositing "sputtering" the conductive material, wherein the introducing is effected after the positioning; forming at least one contact 20 at an end of the conductive material, opposite the semiconductor device; placing a conductive structure 26 adjacent the at least one contact; applying solder 26 to the at least one contact; positioning at least one conductive trace 58 on the preformed polymeric film and in communication with the conductive material; forming at least one contact in communication with the conductive trace; placing a conductive structure adjacent the at least one contact; applying solder to the at least one contact; and placing the preformed polymeric film on at least a portion of a peripheral edge of the semiconductor device; and placing polymeric material 28 at least laterally adjacent the conductive structure.

To further clarify the disclosure of positioning a preformed polymeric film including at least one aperture, it is noted that the film including the at least one aperture is preformed relative to the introducing step because it is formed in advance of the introducing step. In any case, the cited disclosure

that the film "may have holes formed mechanically by predrilling or similar means, and a positioning process may be used for subsequent alignment on the wafer" is an explicit disclosure that the film is preformed.

To further clarify, Hashimoto discloses selectively introducing conductive material because Hashimoto discloses a process of introducing conductive material by inherently making a choice of, at least, when and where to introduce the material.

To further clarify the disclosure of placing the preformed polymeric film on at least a portion of a peripheral edge of the semiconductor device, it is noted that in the embodiment of the Sixth Basic Art the film is placed on the entire wafer 60 including the edge of the device 1 before dicing. Specifically, at column 11, lines 55-58, Hashimoto discloses that in the "Sixth Basic Art," "the same state as shown in FIG. 11C is reached, and therefore thereafter by carrying out the steps in FIG. 12A and subsequent figures, the semiconductor device can be fabricated." Further, at column 10, lines 40-41 and 52-53, and column 11, lines 14-15, wherein FIG. 11C and 12A are described, Hashimoto discloses, "as shown in FIG. 11C, on the glass plate 54 [analogous to film 64 in the Sixth Basic Art], being the whole surface of the wafer 50," and "the semiconductor chip obtained by dicing the wafer 54

[sic], the glass plate 54," and, "individual semiconductor devices are cut from the wafer 50."

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto as applied to claim 17, and further in combination with Jacobs (6294407).

Hashimoto does not appear to explicitly disclose placing a conductive elastomer over at least one conductive structure, and placing another conductive structure in contact with the conductive elastomer, opposite the at least one conductive structure.

Nonetheless, at column 5, line 61 to column 6, line 46, and column 14, line 44 to column 15, line 2, Jacobs discloses placing a conductive (thermally) elastomer 106 over at least one conductive structure 104, and placing another conductive structure 112a in contact with the conductive elastomer, opposite the at least one conductive structure.

Furthermore, it would have been obvious to combine the disclosures of Jacobs and Hashimoto because it would enable external electrical connection and cooling.

Applicant's remarks filed 2-17-5 have been fully considered and are addressed infra.

Applicant argues, "In contrast to amended independent claim 1, Hashimoto lacks any express or inherent description of selectively introducing conductive material into the apertures of a preformed polymeric film."

The following is a quotation of MPEP 2111.01 [R-1]:

THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING" UNLESS THEY ARE DEFINED IN THE SPECIFICATION

While the ** claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, **this is not the mode of claim interpretation to be applied during examination.** During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (discussed below)>; MSM Investments Co. v. Carolwood Corp., 259 F.3d 1335, 1339-40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001). One must bear in mind that, especially in nonchemical cases, the words in a claim are generally not limited in their meaning by what is shown or disclosed in the specification. It is only when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language. In re Vogel, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970).

This argument is respectfully traversed because the plain meaning of the phrase "selectively introducing" is *introducing by selection*, and, as elucidated in the rejection, Hashimoto inherently introduces by selection.

Relatedly, applicant contends, "As those of ordinary skill in the art would readily understand from the disclosure of the above-referenced application, "selectively introducing" refers to the process by which the conductive material is introduced, not to "when" or "where" the conductive material is introduced, as has been asserted by the Office."

This contention is respectfully traversed because making a choice of when and where to introduce the material is a process.

Further, applicant asserts, "Instead, the express description of Hashimoto is limited to blanket deposition of conductive films over the stress relieving layers described therein in order to introduce conductive material into the apertures of such stress relieving layers and, thus, into contact with the bond pads (*e.g.*, electrodes 12) of a semiconductor device (*e.g.*, semiconductor chip 1). Further, as Hashimoto discloses the suitability of blanket deposition processes for introducing conductive material 68 into the apertures 64a of a preformed polyimide plate 64, it is evident that the conductive material 68 is not necessarily, or inherently, introduced into the apertures 64a."

These assertions are respectfully deemed unpersuasive because the assertion, "Further, as Hashimoto discloses the suitability of blanket deposition processes for introducing conductive material 68 into the apertures 64a of a preformed polyimide plate 64, it is evident that the conductive material 68 is not necessarily, or inherently, introduced into the apertures 64a," is a non sequitur. Additionally, the alleged disclosure of blanket deposition would not necessarily be incompatible with a disclosure of selectively introducing because the selectively introducing could be performed by blanket deposition. In other words, the process of selectively introducing would be inherently disclosed by a disclosure of a process of

introducing conductive material by inherently making a choice of, at least, when and where to introduce the material by blanket deposition.

Also, applicant argues that Hashimoto does not disclose placing polymeric material at least laterally adjacent the conductive structure.

This argument is respectfully traversed, because, as elucidated in the rejection, Hashimoto discloses placing polymeric material 28 at least laterally adjacent the conductive structure 26.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

For information on the status of this application applicant should check PAIR: Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
19-Apr-05

APPROVED
JG
4-14-5

ANNOTATED SHEET SHOWING CHANGES

Filed: April 9, 2001

Serial No.: 09/832,160

Docket No.: 2269-3846.2US

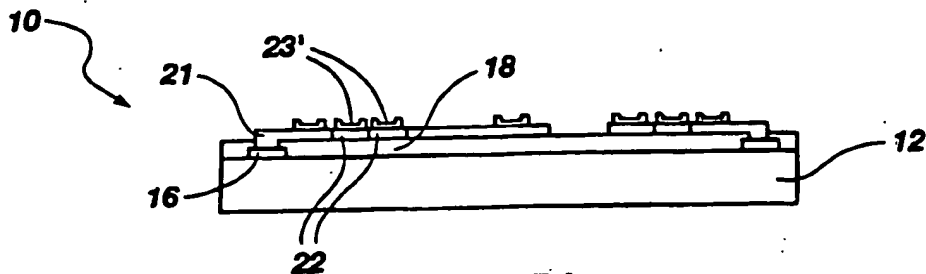
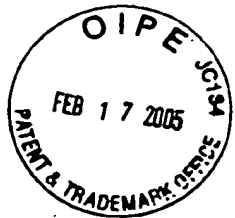


Fig. 5A

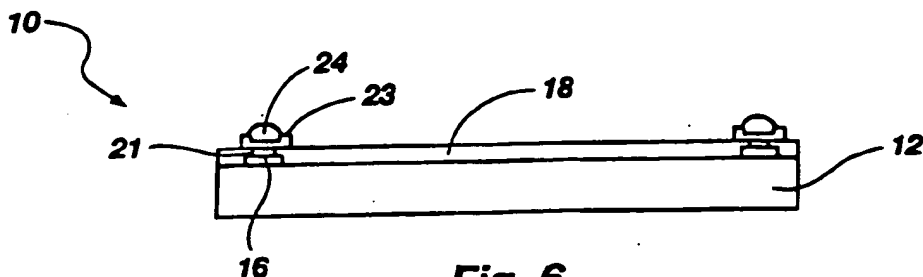


Fig. 6

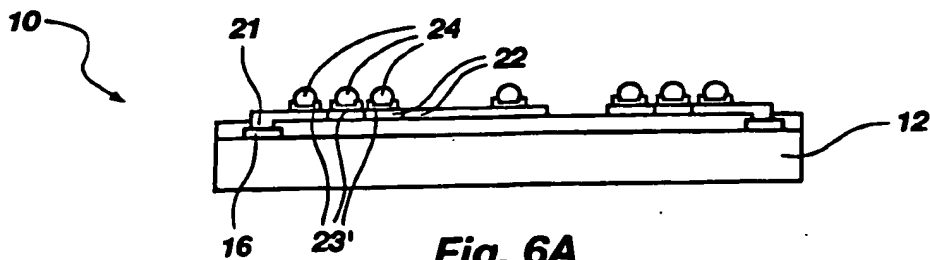


Fig. 6A

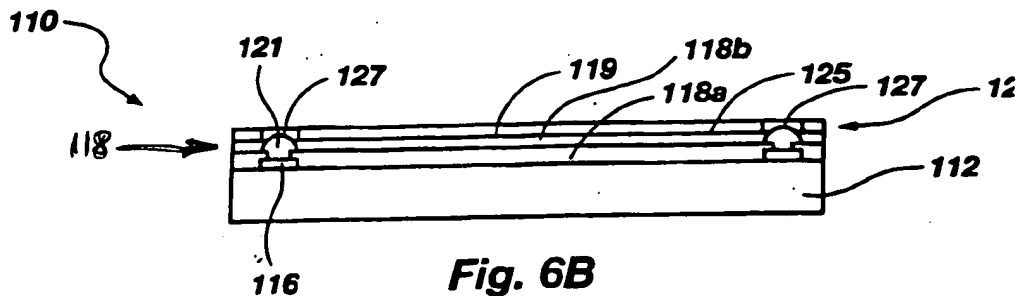


Fig. 6B

